ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

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Three new species of Aculeate Hymenoptera.

BY WILLIAM J. FOX.

Sphex (Isodontia) macrocephalus n. sp.

♀.—Black; head large, subquadrate, covered with long, erect, black hairs, sparsely punctured, more closely so on the face and clypeus; clypeus carinated; labrum and mandibles smooth and shining, the former rounded in front, with a slight pit on each side of the slight carina anteriorly. Thorax finely punctured, covered with long, erect, black hairs; disc with a distinct impressed line, extending from base to centre, scutellum not closely punctured; tegulæ smooth, impunctured; legs shining, posterior surface of hind tibiæ with sericeous pile. Wings blue-black, shining, the marginal cell with the tip obtuse, the third submarginal rounded at tip. Petiole finely, but not closely punctured; with long, erect hairs; the remaining segments of the abdomen smooth, shining, with a few scattered, punctured beneath, and last segment with a few scattered hairs. Length .80 inch.

One specimen. Collected in Fairmount Park, Philadelphia, Pa., during 1889.

Miscophus americanus n. sp.

♀.—Black; face, cheeks and thorax covered with silvery pile, very dense on the clypeus and sides of the thorax; head wider than the thorax, very finely and closely punctured, a distinct longitudinal impressed line, extending from lower ocellus almost to base of clypeus; clypeus divided into three parts, the latter rounded in front, the central part largest; thorax very finely punctured; the tegulæ slightly brownish, impunctured; metathorax with slightly heavier punctures, with a well defined, raised, central line extending from base to apex; legs sparsely covered with silvery pile, more dense on the tarsi; wings hyaline, the anterior pair with a darker apical margin iridescent; marginal cell rounded beneath, acuminate at tip, the second recurrent nervure received by the second submarginal cell near its apex; abdomen smooth and shining, very finely punctured, the apical margins of the first to fourth segment above with silvery pile, more dense laterally, beneath, the second and third segments with sparse, sericeous pile, more obvious on the posterior margins, venter with a few long, black hairs. Length .18 inch.

One specimen. Camden County, N. J.; July 29, 1890.

This is the first species of this genus known to occur in North America, and should be placed in the Larridæ, after the genus *Pison*. It can be distinguished by possessing only two submarginal cells.

Photopsis Cressoni n. sp.

♂.—Black; clothed with long, erect, pale hair; head finely punctured; thorax distinctly punctured, much more strongly and deeper on the dorsulum and scutellum; metathorax with very large, deep punctures; subtruncate behind; wings fuscous, nearly hyaline at base, iridescent in certain lights, first recurrent nervure received by the second submarginal cell, between its base and middle, subcostal nervure incurved, so that it touches the costal nervure; nervures and stigma black, the latter and the costal and subcostal nervures very much so; abdomen shining, finely, but not closely punctured, the second segment contracted at apex, beneath the second segment is deeply punctured, the third to seventh ventral segments almost entirely smooth, polished. Length .25 inch.

One specimen, Camden County, N. J., Sept. 9, 1890.

This species is, I believe, the first known to have been captured in the eastern United States, and can be at once distinguished by its entirely black color. It belongs to Blake's Division II, having two submarginal cells, and the first segment of abdomen being nearly sessile with the second.

It gives me great pleasure to dedicate this species to Mr. E. T. Cresson, whose labors have done much to advance the study of the North American Hymenoptera.

OVIPOSITION OF ANOMALON sp.*

BY C. P. GILLETTE.

While passing an apple tree on August 18th, last, on which were a brood of *Datana ministra* larvæ about one-third grown, my attention was attracted by the presence of a large hymenopterous parasite busily ovipositing in their soft bodies, and, apparently, much to their discomfort. The parasite was a large black Anomalon sp. not in my collection, unless, possibly, it is a variety of *A. pallitarse* Cress. It differs from Cresson's description of this species by having its middle and hind pairs of legs black, and its face, antennæ and front pair of legs entirely yellow.

This parasite was so intent upon her work that she did not leave when I pulled the limb down close to my face so that I could distinctly watch operations. The entire brood of larvæ were apparently alarmed and were striking their heads violently from side to side to frighten away their enemy. The parasite stood upon a leaf in easy reach of a number of her victims watching their movements, and, as soon as one became quiet enough, she would quickly thrust it with her sharp ovipositor. The manner in which this was done was what especially interested me. I had supposed that these parasites would stand upon or above their victims and thrust down upon them, but such was not her manner. I was reminded of one who fences, and, with a quick thrust straight in front, pierces his combatant. This insect stood upon her two back pairs of legs, the front pair not being put to any

* Read before the Iowa Academy of Science, at Des Moines, Sept. 5, 1890.

use. The long abdomen was bent under the thorax and between the legs, and the thrusts were made straight in front of the face. As the abdomen was brought forward the short ovipositor pointed straight in front like the index finger. See illustration.

The larvæ when pierced did not drop to the ground, but threw their heads higher in the air and ejected a dark colored liquid. So far as I saw but one egg was deposited in each.

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ELEMENTARY ENTOMOLOGY.

Fifth Paper.—THE THORAX, THE LEGS.

The second region of an insect's (imago's) body is the thorax. To it are usually attached three pairs of legs and two pairs of wings. It is composed of three segments. The first segment, articulating with the occiput in front, is the *prothorax*, which bears the first pair of legs. The second segment is the *mesothorax*, bearing the second pair of legs and the first pair of wings. The third segment is the *metathorax*, bearing the third pair of legs and the second pair of wings.

Typically, each segment of the thorax consists primarily of four parts, a dorsal part (*tergum* or *notum*), a ventral part (*sternum*), and on each side, between the tergum and the sternum, a *pleurum*.*

The prefixes *pro-*, *meso-* and *meta-* are used before *notum* and *sternum* to denote the notum and sternum of the prothorax, mesothorax and metathorax respectively.

"The tergum of each thoracic segment is composed typically of four sclerites. These are arranged in a linear series. They are named, beginning with the first or most cephalic, *præscutum*, *scutum*, *scutellum* and *post-scutellum*. In the prothorax the sutures between these four sclerites are in many cases obsolete, the pronotum appearing to be composed of a single sclerite. In beetles and bugs the scutellum of the mesothorax is usually quite conspicuous, appearing as a more or less nearly triangular piece between the first pair of wings at their base. Most entomological

* Tergum, sternum and pleurum, with their adjectives tergal, sternal and pleural are sometimes used to denote respectively the dorsal, ventral and lateral parts of the entire body of an insect. In such cases the terms *tergite*, *sternite* and *pleurite*, are applied to the dorsal, ventral and lateral parts of each segment.

writers refer to this sclerite as *the* scutellum. Of the four sclerites which compose the tergal portion of each thoracic segment, the scutum is usually the largest; the scutellum is the second in importance; while the præscutum and the post-scutellum are frequently but little developed" (Comstock)

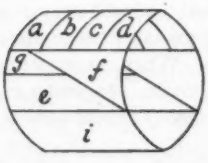

Fig. 10. Diagram of a thoracic segment (after Comstock).

a, præscutum; *b*, scutum; *c*, scutellum; *d*, post scutellum; *e*, episternum; *f*, epimeron; *g*, parapteron; *i*, sternum; *a*, *b*, *c* and *d*, taken together form the tergum; *e*, *f* and *g*, taken together form the pleurum.

The sternum consists of but one sclerite.

The sclerites of the pleurum are the *episternum* and the *epimeron*, and sometimes a third, the *parapteron*. Their position is shown in fig. 10. The parapteron in different groups of insects has also been called the *tegula*, *scapula* and *patagium*. The thoracic *spiracles** pierce a small piece of the pleurum called the *peritreme*.

Attached to the thorax are the organs of locomotion—the legs and the wings.

The leg, or the foot of an insect, as it is indifferently called, consists of five parts, the *coxa*, *trochanter*, *femur*, *tibia* and *tarsus*. The coxa, or hip joint, is the basal part, and is attached to its thoracic segment near the lateral border of the sternum, sometimes so firmly as to be immovable. A small sclerite is sometimes found between the coxa and the epimeron, called the *trochantin*. The trochanter is between the coxa and the femur, or thigh. The fourth part is the tibia, or shank, and the terminal or fifth part is the tarsus, consisting of from one to six joints. Usually the leg of an insect is armed with spines, or clothed with hairs. The spines at the apex of the tibia are usually longer than the others, and receive the distinctive name of *tibial spines*, or *tibial spurs*. The last joint of the tarsus bears one or two *tarsal claws*, *nails*, or *unguiculi*. On the ventral surface of the joints of the tarsus are often "cushions of short hair or of membrane, capable of

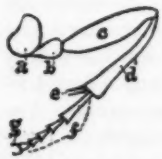

Fig. 11. Leg of an insect.

a, coxa; *b*, trochanter; *c*, femur; *d*, tibia; *e*, tibial spurs; *f*, tarsus of five joints; *g*, tarsal nails.

* See page 71 of this volume of ENTOMOLOGICAL NEWS

inflation, or concave plates, which act so as to produce a vacuum and thus enable the insect to walk on the lower surface of objects (Comstock)." These cushions are termed *pulvilli*, or *onychii*. The pulvillus of the last joint very often projects so as to appear between the tarsal claws; it is *the* pulvillus. When, as sometimes is the case, the last tarsal joint has two pulvilli, one under each claw, there may be between them a third piece of similar structure —the *empodium*.

The first pair of legs is directed forwards, the other two pairs backwards. The first pair of legs is sometimes aborted, in which case the second pair is directed forwards.

The true, or thoracic legs, may or may not exist in the larva. When they do exist they are jointed. False, or abdominal legs, are found both in larvæ and imagos, and will be referred to in treating of the abdomen. P. P. C.

ENTOMOLOGY AT LONGPORT, N. J.

BY JOHN HAMILTON, M.D.

Longport is on the southern end of the island on which Atlantic City is situate, from which it is distant about six miles. This part of the island is narrow, and the space between the ocean and the bay is a succession of sandhills without any extensive salt marshes. The sides of many of these dunes and intervening depressions support an interesting flora, much of which is strictly maritime, and blooms during this month, attracting several species of Lepidoptera and many beautiful Hymenoptera. The native species of Coleoptera are few in comparison with the number on Brigantine Beach, where there are extensive salt meadows, and where I could have taken two hundred or more species with no more labor than was expended in collecting the forty-seven at Longport. The species not formerly taken at Brigantine, for which see Smith's Catalogue of the Insects of New Jersey—were *Cicindela marginata* Fab., which was somewhat abundant among the sand-hills with *repanda* and *hirticollis;* two forms of *Cercyon* occurring together in great numbers in and under decaying sea-grass deposited on sandy places by the bay tide, one of which, on comparison with Swedish specimens, seems to be *C. littorale* Gyll., and the other apparently only differing by having the apex

of the elytra pale; *Xantholinus pusillus* Sachse, which greatly resembles an undescribed maritime species from Florida, but which, like *emmesus*, has only five punctures in the dorsal series of the thorax; and *Geotrupes Horni* Blanch., dug from holes under mushrooms on the main land. Several examples of *Euphoria areata* Fab. were taken on the wing among the sand-hills on the 9th, 10th and 11th, but none afterward.

The Lepidoptera and Orthoptera are the same as on Brigantine, but here seems to be a metropolis of the larger aculeate Hymenoptera—Apidæ, Andrenidæ, Vespidæ, Sphecidæ, etc., but not having studied this order much, I know few of the species. Inspired with a sudden interest by reason of their great variety, activity and beauty, I collected them one sunny afternoon, and found I had twenty-seven species from one-half to two inches in length—a beautiful collection. Stung? Of course I got stung; in fact, I was stung, I think, at least once by every species collected, but the fascination of capturing such charming creatures is so great one does not greatly mind this after the first three or four stings, as the sensibility of the thumb and finger of the hand used in transferring them from the net to the bottle becomes greatly obtused. The sensation produced by the sting of each species is mostly appreciatively different, so much so, that with a little experimenting, without seeing them, their differentiation might not be difficult. The sting of such species as use this organ merely defensively causes simply pain in varying degrees, while that of such as use it in addition in the capture of prey, produces, after the momentary pain of the thrust, a numbness more or less paralizing to the hand, and often lasting a whole day. To this class belongs the beautiful *Mutilla occidentalis*, whose sting is near half an inch in length, and the feeling it causes so painful and persistently benumbing that, I confess, I would not care to come in contact with it at close intervals.

Unlike the honey bee, these insects never leave a sting in the wound, and the same individual can use this weapon any desired number of times, an accomplishment that might be of some practical use in case stinging should be adopted as a remedial measure in Legitimate Medicine, as is quite possible. The honey bee has often been used by empirics with good results, it is claimed, in the treatment of rheumatism, neuralgia, forms of local paralysis and various diseases, and cases have lately been reported in

medical journals by legitimate practitioners to the same effect, but the honey bee might not be the most efficacious; in fact, each species may be possessed of a different potentiality and better adapted to the treatment of one disease than to that of another, which might be readily determined by a little empirical experimenting, and quite probably the greatest remedial virtues would be found in the species producing numb and paralyzing effects.

Treatment of this kind can best be conducted in a hospital, and as Hymenoptera of the most desirable species are abundant in many places on the coast and easily cultivated, the establishment there of an enkentric sanitarium is not a future improbability, and in connection with pure ocean air, hot or cold sea-water baths and other adjuvants, could scarcely be else than meritoriously popular.

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DESCRIPTION OF THE PREPARATORY STAGES OF DATANA CONTRACTA Walker.

BY WM. BEUTENMULLER.

EGG.—Same as that of *Datana ministra* Dr. Laid in masses of twenty-five to fifty, on the underside of leaf.

YOUNG LARVA.—I have made no record of this stage.

AFTER FIRST MOULT.—Head jet-black, shining, as is also the cervical shield. Body brown, with four very pale yellow stripes along each side and three beneath. Abdominal legs dull orange with darker bands. Thoracic feet and anal clasps and plates jet-black.

AFTER SECOND MOULT.—Appearance yellow. Head same as in the previous moult. Body more reddish brown, also the cervical shield. The stripes are comparatively broad, the space between being somewhat narrower. The feet are also reddish brown, also the tips of the abdominal legs.

AFTER THIRD MOULT.—Head and cervical shield jet-black, shining. Body color pitchy brown, covered sparsely with sordid white hairs. The stripes are now sordid white and equidistant, and as broad as the intervening spaces, except the dorsal space, which is the widest. Body beneath concolorous to the above, with the three stripes much narrower than the intervening spaces. On the 4th, 5th, 10th and 11th segments are two reddish brown

patches. Abdominal legs reddish brown with black corneous bands. Thoracic feet and anal clasp jet-black. Length 30 mm.

AFTER FOURTH MOULT—*Mature Larva.*—The cervical shield now becomes orange-yellow and the stripes creamy-white, otherwise the same as in the previous stage. Length when full grown 55 mm.

FOOD PLANTS.—Various species of Oaks (*Quercus*) Chestnut (*Castania*) and Hickory (*Hickoria*). Single brooded.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

In the future all papers received for publication in the News will be printed according to date of reception.

NOTICE.—Those who wish to continue their subscriptions to **Entomological News** for the coming year, will please indicate their desire to the Treasurer (see second page of cover) **before** January 1st, next. The price will be the same—**One Dollar.** We hope to make volume 2 even better than 1, and trust that our readers will do what they can to help us do so.—ED.

THE following four species of Pompilidæ were captured in the act of carrying off spiders during the last season, viz.: *Pompilus æthiops* Cr., *biguttatus* Fab., *marginatus* Say, *Priocnemis pomilius* Cr.—W. J. FOX.

WE have received from Mr. Wiley, of Miles City, Mont., a fine photograph of what is supposed to be the larva of *Coloradia pandora* Blake. The caterpillar was found feeding on sage brush. Mr. Wiley describes it as follows: Mature larva.—Color all black, spines shiny and sting the hand like *Hyperchiria io*. Pupa somewhat resembles *io*, but smaller, and not so robust. Pupa nearly black. Pupa rotted.

THE second annual meeting of the Association of Official Economic Entomologists will be held at the University Buildings, Champaign, Ill., November 11th to 15th, proximo, at the same time and place as the meeting of the Association of Agricultural Colleges and Experiment Stations. The committee on Entomology of the latter association will meet at the same time. Members expecting to attend will confer a favor upon the officers if they will announce the fact, and will send titles of papers to be read, or topics they desire discussed, to the Secretary. All are earnestly urged to be present if possible.—J. B. SMITH, Sec., New Brunswick, N. J.

ALLOW me to call your attention to an error which appeared in ENTOMOLOGICAL NEWS for May, and which I think is worth correcting. The *Erebia* which Mr. J. D. Evans collected at Sudbury, in 1889, was not *epipsodea*, but *discoidalis*, a much rarer species, and hitherto only taken many degrees further North. Mr. Evans took five specimens in all, and all on the same day, and one or two were also taken by Dr. E. D. Peters, Jr. I have recently heard from Mr. Evans in reference to his collecting during the past season, but no specimens of this interesting species were obtained there this year. H. H. LYMAN.

I DESIRE to state in regard to my own observations of the cocoons of *Callosomia angulifera*, that during the Winter of 1889–90, I collected, on the Catawissa Mountain at an altitude of 1800 feet, 77 cocoons of what I supposed to be *C. promethea*, all of which were suspended on Sassafras and Wild Cherry by a silken cord covering the foot-stalk of the leaf and firmly attached to the twig. Of these 12 did not hatch; from 29 there emerged ichneumon parasites, and from the remaining 36 I succeeded in obtaining 27 *promethea* and 9 *angulifera*, all females. I never looked for or found a cocoon of *angulifera* on the ground. STEPHEN BALDY,
Catawissa, Pa.

DRAGONFLIES CONGREGATING AT NIGHT.—Prof. D. S. Kellicott, of the Ohio State University, Columbus, O., writes, in a letter of Sept. 16, 1890, "In your observations of Dragonflies, have you found them congregating at night? In July last I met, several times, with an interesting case. *Hetærina americana*, as I suppose, I have not compared the descriptions of Walsh's species, along the Shiawassee River, Michigan, gathers in great numbers on plants overhanging the river. I often gathered from twenty to thirty by one sweep of the net. Sexes mingled, males more numerous." (with Prof. Kellicott's permission.—P. P. C.)

EDWARD BAMBRICK, 32 years, of Lagrange, near Bustleton, died on Wednesday, of blood poisoning, caused by the bite of a green caterpillar, Nearly a fortnight ago Bambrick told Policeman Ashton, of Bustleton, that he had been bitten on the neck by a green caterpillar as he lay on the grass in front of his own home. The creature inflicted what seemed an insignificant puncture, which bled freely. He did not heed the wound until some time after, when Dr. Beyer was called in. Medical skill failed to overcome the poison, and the patient died.—*Philadelphia Press.*

ANY other irritant would have acted in the same way, the fault was in the individual.—ED.

OBITUARY.

PETER MAASEN, of Elberfield and Dusseldorf, died on August 2d, in his eightieth year. Mr. Maasen was well known through his writings on Saturnidæ, of which he made a specialty.

Mr. C. G. HALL died September 3d, at Bucland, Dover, England.

WE have received notice of the death of Mr. C. Zeiller, of Regensberg, Bavaria.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be limited to twelve (12) for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Such identifications as can be given will be published, according to number, in the issues of the NEWS. Address packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

JOURNAL OF THE ASIATIC SOCIETY OF BENGAL, vol. xix, part 2, 1890. —Suppl. No. 1, Catalogue of the Insecta of the Oriental Region. No. 2, Family Carabidæ, E. T. Atkinson.

PROCEEDINGS OF THE LINNEAN SOCIETY OF NEW SOUTH WALES, vol. iv, pt. 3d.—Rhopalocera from Mt. Kosciusko, New South Wales, by A. Sidney Oliff. New species of Lampyridæ, including a notice of the Mt. Wilson Fire-fly, by A. Sidney Oliff. Further notes on Australian COLEOPTERA, with descriptions of new genera and species, pt. 4, by Rev. T. Blackburn. DIPTERA, pt. 7, the Tipulidæ brevipalpi, by Fred. A. A. Skuse, vol. iv, pt. 4th. A revision of the Australian species of *Euplœa*, with synonymic notes and descriptions of new species, by W. H. Meskin. On Queensland and other Australian MACRO-LEPIDOPTERA, with localities and descriptions of new species, by Thomas P. Lucas. Descriptions of additional Australian Pyralidina, by E. Meyrick. Revision of Australian LEPIDOPTERA, pt. 3, by E. Meyrick. Revision of the genus *Heteronyx*, with descriptions of new species, by Rev. T. Blackburn. Notes on Australian COLEOPTERA, with descriptions of new species, pt. 4, by Rev. T. Blackburn. Studies in Australian Entomology—No. 2, Six new species of Carabidæ, by Thomas G. Sloane.

ANNALS AND MAGAZINE OF NATURAL HISTORY, vol. vi, No. 33.—Notes on Longicorn COLEOPTERA of the group Cerambycidæ, with descriptions of new genera and species, by Charles J. Gahan. Descriptions of new species of African Lycænidæ, chiefly from the collections of Dr. Staudinger and Henley Grose Smith, by W. F. Kirby.

THE APPLE MAGGOT, *Trypeta pomonella*.—A consideration of the literature, history, distribution, transformation, life-history and habits of this insect; also remedies. The results of investigations made in 1888–89, by F. L. Harvey, M. S. This interesting paper is fully illustrated by four plates, with a number of figures.

NEW TYPES OF COCKROACHES FROM THE CARBONIFEROUS DEPOSITS OF THE U. S.—New carboniferous Myriapoda from Illinois. Illustrations of the carboniferous Arachnida of North America, of the orders Anthracomarti and Pedipalpi. The insects of the Triassic beds at Fairplay,

Col., from Memoirs Boston Society Natural History, by S. H. Scudder, 72 pages and 12 fine plates; new genera and species are described.

THE ENTOMOLOGIST, October, 1890.—Additions to the British list of Deltoids, Pyralides, Crambi, since 1859 (with plates), by Richard South. Abundance of LEPIDOPTERA in New Zealand, by W. W. Smith. Notes on *Teniocampa opima*, by J. Arkle. Contributions to the chemistry of insect colors, by F. H. Perry Coste. The Westman Islands, by Rev. Dr. F. A. Walker. The alteration of the name of Indian Geometrid Moth, by A. G. Butler. Entomological papers in Continental Periodicals, by W. Warren. Entomological notes, captures, etc. Doings of Societies, Reviews.

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, October, 1890.—Classification (concluded), by A. F. Griffith. Occurrence of *Plusia moneta* Fab. in Great Britain, by C. G. Barrett. *Eulepia cribrum*. by Rev. E. N. Bloomfield. *Apatura isis* by J. E. Mason. Note on the food of *Drymonia dodonæa*, by W. R. Jeffrey. Re-occurrence of *Epischnia Bankesieila* at Portland, by N. M. Richardson. Occurrence in Dorset of *S. subsequana*, H. and *M. rufimitrana* H. S., id. Notes from the Red Sea, by J. J. Walker. The life-history of the new *Tinagma* (*T. betulæ*) of the Birch, by J. H. Wood. Description of *T. betulæ* n. sp., by H. T. Stainton. Some remarks on the genus *Xylophilus*, with descriptions of two new species from Japan, by G. C. Champion. Two species of Psocidæ new to Britain, by R. McLachlan. *Æschna juncea* L. near Ringwood, id. *Gymnancyla canella* in September, by A. E. Hall. *Aplota palpella* in Wilts, by E. Meyrick. Hybernation of *Simæthis pariana*, by B. A. Bower. *Gyrinus urinator* at Swange, by C. H. Goodman. *Carabus glabratus* Payk. in Ireland, by Rev. Canon Fowler. *Creophilus maxillosus* v. *ciliaris* Steph., by H. S. Donnisthorpe. *Athous rhombeus* Ol. at Cobham Park, by J. Malings. Note on *Scopæus erichsoni* and *Hodroporus davisii*, by W. G. Blatch. Coleoptera in the New Forest, by Rev. Theo. Wood. *Quedius tristis predaceous*, by Prof. W. R. Kilburne. Obituary. Societies.

THE YOUNG NATURALIST, October, 1890.—The Pterophorina, by J. W. Tuft. Coleoptera at Guestling, by A. Ford. *Pieris brassicæ* pupæ lying over, by James Dixon. *Lithosia sericea*, by Joseph Collins. *Nonagria typhe*, by G. Pullen. *Hydæcia petasites*, by Joseph Collins. *Noctua dohlii*, by A. E. Hall. *Agrotis agathina*, by Joseph Collins. *Rumia cratægata*, var., by A. E. Hall. Hawk moths, by C. W. Dale.

MEMOIRES SUR LES LEPIDOPTERES REDIGES par N. M. Romanoff, tome 4. Le Pamir et La Faune Lepidopterologique par Gr. Groum-Grshimailo. Illustrated with 21 magnificent colored plates with many figures, 575 pp. St. Petersburg, 1890.

RECUEIL ZOOLOGIQUE SUISSE, v, No. 2, July, 1890.—The histological disposition of the pigment in the eyes of Arthropods under the influence of direct light and of complete obscurity, by Mlle. M. Stefanowska, 2 pl.

ZOOLOGISCHER ANZEIGER, Sept. 1, 1890.—On a peculiar organ in the embryo of Locustidæ, by W. M. Wheeler.

JAHRBUCH DES NATURHISTORISCHEN LANDES-MUSEUMS VON KARNTEN 20 heft, Klagenfurt, 1889.—The Lepidoptera of the Lavantthal, and of both Alps Kor and Saualpe, by G. Höfner. On Carinthian Hymenoptera,* by E. Liegel.

ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE, L, 1890.—Researches on the Structure of Spermatozoa: The spermatozoa of insects (I. Coleoptera), by E. Ballowitz, 4 plates. The development of the sexual organs and the intestine in *Chironomus*, by R. Ritter, 1 plate.

ENTOMOLOGISCHE NACHRICHTEN, xvi, Nos. 17 and 18, September, '90. —New West African Orthoptera from Kribi, collected by H. Lieut. Morgen,* F. Karsch; 4 woodcuts; *Morgenia*, *Matæus*, *Chondrodera*, *Lichenochrus*, *Mormotus*, *Liocentrum*, *Opisthodicrus*, *Tomias*, *Lagarodes*, *Stenampyx*, *Pantecphylus*, *Polyglochin*, *Habrocomes*, new gen. Synopsis of the trispinous species of *Sphenoptera* of Europe and the Caucasus,* by E. Reitter. A Review of Scudder's Butterflies of the Eastern United States and Canada, by A. Speyer.

SITZUNGSBERICHTE DER NATURFORSCHER GESELLSCHAFT BEI DER UNIVERSITAT DORPAT, ix, 1 heft (1889), 1890.—Four papers on Livonian Diptera, by H. Sintenis. Observations on Tardigrada, by H. Rywosch.

MITTHEILUNGEN DER SCHWEIZERISCHEN ENTOMOLOGISCHEN GESELLSCHAFT, viii, No. 5, August, 1890.—Three papers on Swiss *Bombus*, by Frey-Gessner. Notes on Swiss Neuroptera, by F. Ris. Two new genera of Tryphonidæ,* by Dr. Kriechbaumer; *Aethalodes*, *Bremia* n. gen. (from Europe). Diptera Helvetiæ, by Dr. G. Schoch; 1st part. Coleoptera Helvetiæ, by Dr. Stierlin (continued).

BOLLETINO DEI MUSEI DI ZOOLOGIA ED. ANATOMIA COMPARATA DELLA R. UNIVERSITA DI TORINO, N. 78.—Diagnoses of new species of Diptera [from Italy]*, by Dr. Giglio-Tos.

No. 84.—New species of Diptera from the Zoological Museum of Torino,* by Dr. Giglio-Tos; 1 plate; *Ditomyia zonata*, *D. mexicana*, Orizaba, Mexico, n. sp., figs. 6 and 7.

No. 85.—On a mode of preserving the larvæ of Lepidoptera with their colors, by F. Crosa.

ZOOLOGISCHER ANZEIGER, Sept. 15, 1890.—Some observations concerning the closed tracheal system in insect larvæ by Dr. H. Dewitz.

VERHANDLUNGEN DER K. K. ZOOLOGISCH-BOTANISCHEN GESELLSCHAFT IN WIEN xl, 1 quartal, 1890.—Monograph of the Proscopidæ,* by C. Brunner. v. Wattenwyl; 3 plates; *Prosarthria*, *Apioscelis*, *Corynorhynchus*, *Tetanorhynchus*, *Sliphra*, *Taxiarchus*, *Anchotatus*, *Epigrypa* n. gen.; all the species are from South America. A new species of Tenthredinid,* and Apidæ frequenting *Brassica oleracea* L, by Dr. R. Cobelli. Determination table of the Parnidæ of Europe, the Mediterranean fauna and the bordering districts, by A. Kuwert.

* Contains new species other than North American.

Doings of Societies.

A regular meeting of the Entomological Section of the Academy of Natural Sciences was held at the Hall September 25th. Meeting called to order at 8.20 P. M. In the absence of the Director, Dr. Horn, Mr. Martindale occupied the chair. Members present: Messrs. Ridings, Laurent and Skinner. Associates: Welles, Calvert, Westcott, Liebeck, Castle, Seeber and Fox. A number of specimens were presented to the cabinet, among them being *Arg. montinus* and *C. mandan* from Mr. S. H. Scudder. Mr. Calvert presented determinations of the species of *Odonata* brought home by the expedition sent to Mexico by the Academy. Mr. Laurent reported the capture of *C. serena* and *Apatela funeralis* at the electric light. Mr. Martindale spoke of the great scarcity of species of *Catocala* this Summer, and reported finding *P. ajax* and the larvæ of *Phobetron pithecium* and *Tolype velleda*. He had had success in capturing moths by rubbing rotting bananas on trees to attract them. Mr. Welles reported the capture of *Vanessa J-album* and *Cat. unijuga* from Elwyn, Delaware County, Pa. He had seen *Feniseca tarquinius* greatly attracted to a perspiring individual. Mr. C. W. Johnson, of the Wagner Institute, was elected an associate.

HENRY SKINNER,
Recorder.

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, Sept. 4, 1890.—Under the head "short communications and exhibition of specimens," Mr. Heidemann spoke of the occurrence of *Cylapus tenuicornis* (Capsidæ) near Washington, D. C., and Mr. Schwarz exhibited specimens of *Choragus nitens* (Anthribidæ) lately found in the District, also a branch of *Carpinus* infested in a peculiar way by the larvæ of *Acoptus suturalis* (Curculionidæ) and a specimen of *Hymenarcys nervosa* with deformed antennæ, and he also called attention to the reported discovery of the stylopized Gryllotalpas in eastern Africa. Dr. Marx reported having found specimens of *Latrodectus* under a board, devouring carabids—the webs of the spider being garnished with fragments of the beetles. As possibly throwing light on the subject, Prof. Riley mentioned having been greatly surprised this Summer at the large number of insects, *Lachnosterna, Xylocopa, Bombus*, etc., that he found about his grounds at Sunbury, with large perforations and apparently killed by birds, and probably the house wren. Mr. Fox thought that spiders were largely responsible for this work. Prof. Riley described his recent investigations into the life-history and habits of *Sphecius speciosus*, exhibiting specimens of the egg *in situ* on Cicadas, and of the young and full-grown larvæ and cocoons. Careful drawings were shown illustrating the different stages and habits of *Sphecius*.

Mr. Schwarz queried, in view of the earlier appearance of the *C. septendecim*, whether *Sphecius* ever preyed on that species. Prof. Riley showed that the period of *Septendecim* and *Sphecius* overlapped, and that the general belief that *Sphecius* attacked the seventeen-year locust, while not based, so far as he recalled, on observation, was probably well founded.

Mr. Howard exhibited specimens of sand cricket, *Stenopelmatus fasciatus*, which had been recently sent to Prof. Riley by one of the correspondents. Mr. Howard stated that they occurred abundantly in the southwest, and are reported erroneously to be extremely poisonous. As stated by Prof. Riley, in the "Standard Natural History," they are carnivorous in habit.

Mr. Mann described some observations and experiments relating to the longevity of decapitated specimens of *Caloptenus*, and the vigorous resistance of such specimens to the attacks of ants.

Mr. Schwarz, "On Black Locust Insects," presented a list of twenty-four species of Coleoptera bred by him in May from dying trunks of Black Locust, and spoke of the principal insect enemies of this tree in the District. Discussed by Messrs. Riley and Howard.

Mr. Schwarz also read a paper on the food habits of some Scolytidæ observed by him during the Summer. Galleries of the following species were exhibited and explained: *Xyloterus politus* in *Acer dasycarpum; Xyleborus furcatus* and *pubescens* in Walnut; *Cnesinus strigicollis* in *Liquidambar styraciflua*.

C. L. MARLATT,
Recording Secretary.

PROCEEDINGS OF THE ENTOMOLOGICAL CLUB OF THE A. A. A. S. OF INDIANAPOLIS, 1890.—The Club met in regular session on August 20th, 9 A. M., room 11, in the State House. President, Prof. A. J. Cook, in the chair. There were present through the meeting, Messrs. Chas. Robertson, Clarence M. Weed, E. W. Clatpole, James Troop, F. S. Earle, L. H. Pammel, Herbert Osborn, John Marten, H. Garman, Geo. F. Atkinson, Charles W. Hargitt, Thomas Hunt, John W. Spencer, W. B. Alwood, J. Fletcher, F. M. Webster, W. W. Norman, S. G. Evans. W. S. Blachley, Truman P. Catter, Ralph St. F. Perry, Miss Mary E. Murtfeldt, Miss Augusta Murtfeldt, Mrs. K. B. Claypole, Mrs. O. Hanney.

The President proceeded to deliver a most interesting address upon Teaching of Entomology.

Dr. C. Weed then read a paper upon the life-history of the evening Primrose Curculio (*Tyloderma foveolatum*). He reported breeding a species of *Bracon* from the larvæ of the Curculio, and recorded observations upon the habits of both insects.

At the request of the President, Mr. Fletcher presented some notes upon the injuries caused by the Hessian Fly, the wheat stem maggot and an undetermined species of *Oscinis*. He stated that he had been studying these insects at Ottawa, Can., during the last four years.

A paper on the subject of American Silk Spinners, by Mr. Edward L. Graef, was read by the Secretary, of which the following is an abstract:

"Refers to the periodical, phenomenal increase of some species of insects and their sudden disappearance. Speaks of the adaptability of the cocoons of *L. cecropia* Linn. for the manufacture of silk, and of the firmer belief of the writer in the possibility of the creation of an American industry in the rearing of their larvæ for manufacturing purposes. Solicits

plans for the profitable rearing of the larvæ of this, or other American silk spinners. Also for preparing their cocoons. Offers a prize ($50.00) for this purpose."

An interesting paper was read by Dr. C. M. Weed, the subject of which was "The food plants of the Clover Stem Borer (*Languria moxandi*). Fifteen species of the plants were reported on which the larvæ is known to feed.

Prof. Osborn followed with a paper on a peculiar Coleopterous larva infesting the stems of plants.

Dr. Weed presented a short paper upon the oviposition of *Listronotus latiusculus*. The eggs are laid in bunches of five to ten on the leaf stalks of *Sagittaria variabilis*, and are covered with bits of epidermis chewed up by the adult beetle.

Mr. Charles Robertson made some remarks upon the habits of *Emphor bombiliformis*, which he stated was apparently a special visitor of *Hibiscus*. The nests were constructed by burrowing in the ground, and, in order to facilitate the excavation, water was frequently carried to the hole with which the bottom was moistened. Sometimes but one pellet of earth would be carried out after an application of water, while in some cases he had observed as many as four of these pellets thrown out immediately following an application.

Miss Mary E. Murtfeldt read a charming paper entitled, "Some experiences in rearing insects." In this paper some valuable hints were given as to the best way to manage larvæ so as to carry them to maturity, and the most frequent causes of failure were mentioned. The paper was listened to with great attention by all present.

The Secretary proceeded to read the following paper upon "The Preparatory Stages of *Eustrotia caduca*," by D. S. Kellicott, of Columbus, O.

Prof. Cook presented a note upon a new breeding habit in *Agrotis C-nigrum*. He had found the eggs on the foliage of currant bushes and reared the larvæ thereon.

Prof. Osborn read an interesting paper on the period of incubation of Mallophaga.

Mr. S. F. Earle presented several interesting notes on some injurious insects of southern Mississippi. *Diabrotica 12-punctata* was a very abundant insect, and, in addition to its well-known food-plants, it also fed to an injurious extent upon the foliage of peach and also cabbage. Cutworms were very injurious in gardens. A species of Aphis worked serious injury to the cucumber and melon veins. *Pieris rapæ* is exceedingly destructive. *Doryphora 10-lineata* had not yet reached southern Mississippi. Sphinx larvæ were very destructive to the foliage of tomatoes and the boll worm to the fruit.

(To be continued.)

F. H. WEBSTER,
Secretary.

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